What is claimed is:

1. A purified TRAIL receptor (TRAIL-R) polypeptide that is capable of binding TRAIL, wherein the TRAIL-R is characterized as comprising the amino acid sequence VPANEGD.

2. A TRAIL-R polypeptide of claim 1, wherein said polypeptide is further characterized by a molecular weight of about 50 to 55 kilodaltons.

3. A TRAIL-R polypeptide of claim 1, wherein said polypeptide is further characterized by comprising the amino acid sequence ETLRQCFDDFADLVPFDS WEPLMRKLGLMDNEIKVAKAEAAGHRDTLXTML.

4. A TRAIL-R polypeptide of claim 3, wherein said polypeptide is further characterized by a molecular weight of about 50 to 55 kilodaltons.

5. A purified TRAIL-R polypeptide selected from the group consisting of:

a) the TRAIL-R polypeptide of SEQ ID NO:2; and

b) a fragment of the polypeptide of (a), wherein said fragment is capable of binding TRAIL.

6. A TRAIL-R polypeptide of claim 5, wherein said polypeptide comprises amino acids x to 440 of SEQ ID NO:2, wherein x represents an integer from 51 through 59.

7. A TRAIL-R polypeptide of claim 6, wherein said polypeptide comprises amino acids 54 to 440 of SEQ ID NO:2.

8. A TRAIL-R polypeptide of claim 5, wherein said fragment is a soluble TRAIL-R comprising the extracellular domain of the TRAIL-R protein of SEQ ID NO:2.

9. A purified TRAIL-R polypeptide comprising an amino acid sequence that is at least 80% identical to the amino acid sequence presented in SEQ ID NO:2.

10. A TRAIL-R polypeptide of claim 9, wherein said polypeptide comprises an amino acid sequence that is at least 90% identical to the amino acid sequence presented in SEQ ID NO:2.

11. A TRAIL-R polypeptide of claim 10, wherein said polypeptide comprises an amino acid sequence that is at least 95% identical to the amino acid sequence presented in SEQ ID NO:2.

12. A TRAIL-R polypeptide of claim 9, wherein said polypeptide is naturally occurring.

13. An oligomer comprising from two to four TRAIL-R polypeptides of claim 5.

14. An oligomer comprising from two to four TRAIL-R polypeptides of claim 8.

15. A composition comprising a TRAIL-R polypeptide of claim 5, and a physiologically acceptable diluent, excipient, or carrier.

16. A composition comprising a TRAIL-R polypeptide of claim 8, and a physiologically acceptable diluent, excipient, or carrier.

17. An isolated TRAIL-R DNA, wherein said DNA comprises the nucleotide sequence presented in Figure 1.

18. An isolated TRAIL-R DNA, wherein said DNA encodes a polypeptide selected from the group consisting of:

a) the TRAIL-R polypeptide of SEQ ID NO:2; and

b) a fragment of the polypeptide of (a), wherein said fragment is capable of binding TRAIL.

19. A TRAIL-R DNA of claim 18, wherein said DNA encodes amino acids 1 to 440 of SEQ ID NO:2.

20. A TRAIL-R DNA of claim 18, wherein said polypeptide comprises amino acids x to 440 of SEQ ID NO:2, wherein x represents an integer from 51 through 59.

21. A TRAIL-R DNA of claim 20, wherein said polypeptide comprises amino acids 54 to 440 of SEQ ID NO:2.

22. A TRAIL-R DNA of claim 18, wherein said fragment is a soluble TRAIL-R comprising the extracellular domain of the TRAIL-R protein of SEQ ID NO:2.

23. An isolated TRAIL-R DNA, wherein said DNA encodes a polypeptide comprising an amino acid sequence that is at least 80% identical to the amino acid sequence presented in SEQ ID NO:2.

24. A TRAIL-R DNA of claim 23, wherein said polypeptide comprises an amino acid sequence that is at least 90% identical to the amino acid sequence presented in SEQ ID NO:2.

25. A TRAIL-R DNA of claim 24, wherein said polypeptide comprises an amino acid sequence that is at least 95% identical to the amino acid sequence presented in SEQ ID NO:2.

26. A TRAIL-R DNA of claim 23, wherein said polypeptide is naturally occurring.

27. An expression vector comprising a DNA according to claim 18.
28. An expression vector comprising a DNA according to claim 19.
29. An expression vector comprising a DNA according to claim 20.
30. An expression vector comprising a DNA according to claim 22.
31. An expression vector comprising a DNA according to claim 23.

32. A host cell transformed with an expression vector of claim 27.
33. A host cell transformed with an expression vector of claim 28.
34. A host cell transformed with an expression vector of claim 29.
35. A host cell transformed with an expression vector of claim 30.
36. A host cell transformed with an expression vector of claim 31.

37. An isolated TRAIL-R DNA comprising at least 60 nucleotides of the sequence of SEQ ID NO:1, or the DNA or RNA complement thereof.

38. An antibody that is directed against a TRAIL-R polypeptide of claim 5, or an antigen-binding fragment of said antibody.

39. An antibody of claim 38, wherein the antibody is a monoclonal antibody.